

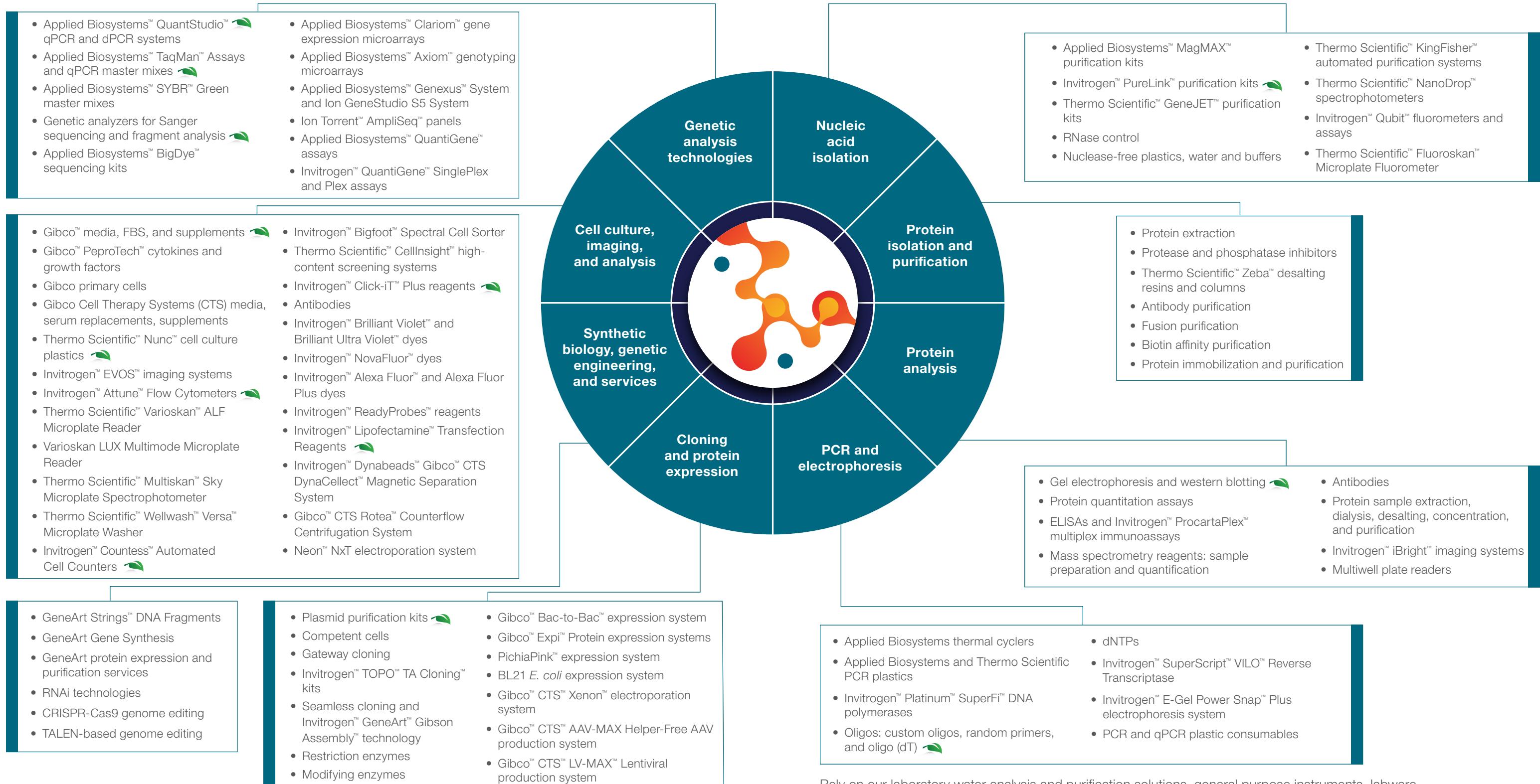
Life sciences solutions

Lab checklist

Product portfolio overview

Overview of Thermo Scientific, Applied Biosystems, Invitrogen, Gibco, and Ion Torrent product portfolios

New, innovative products and customer favorites for every step of your workflow



Greener product alternatives are available in these portfolios. To learn more, go to thermofisher.com/greeneralternatives.



Sample preparation: RNA and DNA isolation and purification and nucleic acid quantification

- RNA extraction**
 - Invitrogen™ TRIzol™ Reagent
 - PureLink, GeneJET, and silica spin columns
 - MagMAX magnetic bead kits
 - Dynabeads magnetic beads
 - KingFisher automated purification
- DNA extraction**
 - Organic reagents
 - PureLink and GeneJET
 - MagMAX magnetic bead kits
 - Dynabeads magnetic beads
 - KingFisher automated purification
- Gel extraction and PCR clean up**
 - Pure Bind Beads
- Plasmid preparation**
 - Mini
 - Midi
 - Maxi
 - Giga
 - Molecular grade

- Plasmid preparation (cont.)**
 - Transfection grade (low-endotoxin)
 - Advanced transfection grade (endotoxin-free)
- Nucleic acid purification essentials**
 - Nuclease-free water
 - Invitrogen™ RNaseZap™ RNase decontamination products
 - Invitrogen™ RNAlater™ stabilization solution
 - Nuclease-free tubes and tips
 - Nuclease-free buffers and reagents
- Nucleic acid quantification**
 - Plate-based assays
 - Varioskan LUX Multimode Microplate Reader
 - Thermo Scientific™ Fluoroskan™ Microplate Fluorometer
 - Invitrogen™ Quant-iT™ assays (high-throughput)
 - NanoDrop spectrophotometers

- Invitrogen™ Qubit™ 4 Fluorometer with WiFi
- Invitrogen™ Qubit™ Flex Fluorometer
- Qubit assays

Recommended literature

- RNA reference guide: sample preparation and purification solutions
- DNA reference guide: sample preparation and purification solutions
- KingFisher Automated Purification Solution brochure
- KingFisher instruments guide
- Dynabeads magnetic beads guide



MORE INFORMATION

Nucleic acid purification: thermofisher.com/sampleprep

PCR, cloning, and nucleic acid electrophoresis

- Reverse transcriptases (RT)**
 - Direct RT
 - One-step RT
 - Two-step RT
 - RT-qPCR master mix
- DNA polymerases**
 - Hot-start
 - High-fidelity
 - Long PCR
 - Direct PCR
- PCR plastics**
- Thermal cyclers**
 - 96-well
 - 384-well
 - Multiblock
 - Automated
- Nucleic acid electrophoresis**
 - Agarose
 - E-Gel Power Snap Plus Electrophoresis System
 - Invitrogen™ E-Gel™ Precast Agarose gels
 - Ladders
 - Gel stains
- Nucleic acid electrophoresis (cont.)**
 - Buffers
 - Loading dyes
 - UV/LED transilluminators
- Cloning**
 - DNA Vectors
 - Restriction enzymes
 - Modifying enzymes
 - TOPO TA cloning kit
 - Gateway cloning kit
 - GeneArt Gibson Assembly® Cloning Kit
 - GeneArt Strings DNA Fragments
 - GeneArt Gene Synthesis
- Molecular biology basics**
 - DNase-free and RNase-free distilled water
 - dNTPs
 - DNase I
 - Primers
 - Ultrapure water
 - Invitrogen™ RNaseOUT™ Recombinant Ribonuclease Inhibitor



Recommended literature

- PCR/qPCR solutions brochure
- Molecular biology handbook
- GeneArt Gene Synthesis products and services brochure
- Cloning workflow solutions brochure
- GeneArt Services resource guide
- Tools for DNA Cloning brochure
- E-Gel Precast Agarose Gels brochure



MORE INFORMATION

Cloning: thermofisher.com/cloning

Digital PCR: thermofisher.com/dpcr

GeneArt Services: thermofisher.com/geneartgenesandservices

Genome editing: thermofisher.com/genomeediting

Molecular biology education: thermofisher.com/molbioschool

Genetic analysis

- qPCR**
 - QuantStudio real-time PCR instruments
 - TaqMan Assay products (available in multiple sizes as tubes, plates, and cards)
 - TaqMan chemistry
 - SYBR Green
 - Applied Biosystems™ MicroAmp™ PCR plastics
- QuantiGene assays**
 - Singleplex
 - Multiplex
- dPCR**
 - QuantStudio Absolute Q Digital PCR System
 - QuantStudio Absolute Q AutoRun Digital PCR Suite
- qPCR research applications**
 - Gene expression analysis
 - microRNA analysis
 - SNP genotyping
 - Copy number variation (CNV) analysis
 - Drug metabolism analysis
 - Mutation detection analysis
 - Allele quantification
 - Pathogen detection
- Capillary electrophoresis**
 - Sanger sequencing
 - Fragment analysis
 - Applied Biosystems™ genetic analyzers



Recommended literature

- Real-time PCR handbook
- PCR/qPCR solutions brochure
- Sanger sequencing guide
- DNA fragment analysis by capillary electrophoresis user guide
- NGS solutions brochure
- Oncomine™ solutions brochure
- TaqMan product Brochure
- Collibri NGS library preparation for Illumina systems



MORE INFORMATION
Real-time PCR: thermofisher.com/qpcr

Gene expression analysis: thermofisher.com/geneexpression

Molecular biology workflow: thermofisher.com/molecularbiologyworkflow

Oncology solutions: oncomine.com

Sequencing: thermofisher.com/sequencing

Agrigenomics: thermofisher.com/agbio

Transfection and protein expression

- Protein expression**
 - Mammalian
 - Bacterial
 - Insect
 - Algae
 - Yeast
 - Cell-free
- Transfection**
 - Neon NxT Electroporation System
 - Invitrogen™ Lipofectamine™ 3000 Transfection Reagent (broad spectrum)
 - Invitrogen™ Lipofectamine™ RNAiMAX Transfection Reagent (for siRNA or miRNA delivery)
- Project information**
 - Cells _____
- Sample type**
 - Adherent cells
 - Suspension cells
- Details** _____

Recommended literature

- Protein expression handbook
- Transfection product brochure

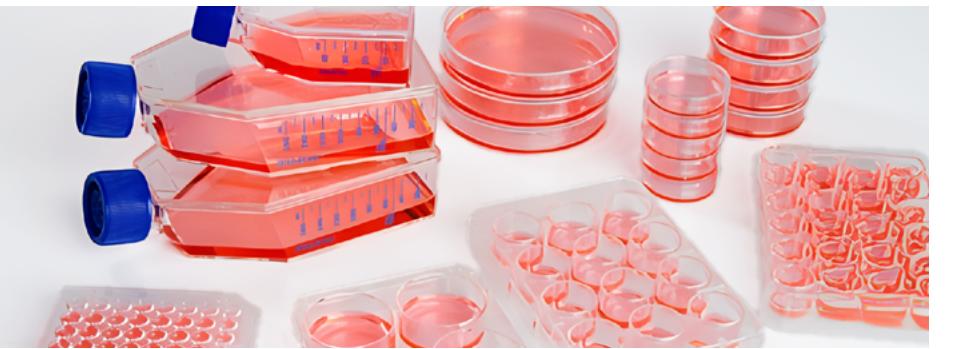


MORE INFORMATION
Transfection: thermofisher.com/transfection

Protein expression: thermofisher.com/proteinexpression

Cell culture, imaging, and analysis

- Cell culture media and reagents**
 - General purpose media
 - Stem cell media
 - Cell types
 - Feeder-free pluripotent stem cells
 - Pluripotent stem cells
 - Hematopoietic stem cells
 - Mesenchymal stem cells
 - Supplements, e.g., Gibco™ GlutaMAX™ Supplement
 - _____
 - Recombinant proteins, e.g., Gibco™ PeproTech™ cytokines
 - _____
 - Extracellular matrices
 - _____
 - Dissociation reagents, e.g., Gibco™ TrypLE™ enzymes
 - _____
- FBS
 - Regular
 - Heat-inactivated
 - Specialty
- Trypan blue solution
- Invitrogen™ LIVE/DEAD™ stains
- Cell culture plastics**
 - Flasks (multiple size and surface options available)
 - Dishes (multiple size and surface options available)
- Specialty cell cultureware**
 - Chamber slides
 - Cell culture inserts
 - Glass-bottom dishes
 - Plates (multiple size and surface options available)
 - Cell culture accessories
 - 15 mL conical tube
 - Screw cap or flip cap
 - 50 mL conical tube
 - Screw cap or flip cap
 - Serological pipettes
 - Volume(s): _____
- Cell and gene therapy**
 - Application: _____
 - CTS media, serum replacements, and supplements
 - CTS DynaCellect Magnetic Separation System
 - CTS Rotea Counterflow Centrifugation System
 - CTS Xenon Electroporation System
 - CTS AAV-MAX Helper-Free AAV Production System
 - CTS LV-MAX Lentiviral Production



Cell type

- T cell
- NK
- iPSC
- HSC
- MSC
- Other

Flow cytometry

- Invitrogen™ Bigfoot Spectral Cell Sorter
- Invitrogen™ Attune™ Flow Cytometer
- Invitrogen™ CytKick™ Max Autosampler
- Conjugated antibodies (Brilliant Ultra Violet, Brilliant Violet, NovaFluor dye options and more)

- Apoptosis assays
- Cell cycle assays
- RNA detection assays
- Calibration and size reference beads
- Compensation beads
- Cell counting beads
- Cell viability assays

Microscopy

- Bright-field microscope (Invitrogen™ EVOS™ XL Core Cell Imaging System)
- Fluorescence microscope (Invitrogen™ FLoid™, Invitrogen™ EVOS™ M5000, or Invitrogen™ EVOS™ M7000 Cell Imaging Systems)

- _____
- Antibodies
- Antibody and protein labeling
- Immunohistochemistry
- Fluorescence *in situ* hybridization (FISH)
- Organelle and cytoskeletal staining
- Cell health and viability staining
- Glutathione detection

- Imaging of calcium and other ions
- Tyramide signal amplification (TSA)
- ReadyProbes reagents
- Antifades and mountants

High-content screening

- Application: _____
- Thermo Scientific™ CellInsight™ CX5 platform
- Thermo Scientific™ CellInsight™ CX7 LED or CX7 LZR platform

Microplate Readers

- Varioskan ALF Microplate Reader
- Varioskan LUX Multimode Microplate Reader
- Application: _____

Bigfoot Spectral Cell Sorter

- Application: _____
- Multiskan Sky Microplate Spectrophotometer
- Application: _____
- Countess 3/3 FL Automated Cell Counter
- Application: _____

Recommended literature

- The Molecular Probes™ Handbook—a guide to fluorescent probes and labeling technologies
- Flow cytometry capabilities guide
- Flow Cytometry protocols handbook
- Imaging protocol handbook
- Cell culture handbook



MORE INFORMATION

Cell-related assay solutions: thermofisher.com/microplates

Cellular imaging and analysis: thermofisher.com/cellimaging

Stem cell research: thermofisher.com/stemcells

Cell culture: thermofisher.com/cellculture

Recombinant proteins: thermofisher.com/recombinantproteins

Flow cytometry: thermofisher.com/flow

Protein biology

- Purification and isolation**
 - Cell lysis and fractionation
 - Organelle isolation
 - Subcellular fractionation
 - Cell fractionation
 - Protease and phosphatase inhibitors
 - Detergents
 - DynaGreen Magnetic Beads
 - Protein purification
 - Immunoprecipitation
 - Ab purification
 - Dialysis cassettes
 - Desalting columns
 - Concentrators
 - Qubit fluorometers and assays
 - Quant-iT
 - Biotin, crosslinker, and dye removal
 - Endotoxin detection and removal
- Probing and detection**
 - Invitrogen™ iBind™ Western Devices
 - Invitrogen™ Bandmate™ Automated Western Blot Processor
 - Primary antibodies
 - Fluorescent or conjugated secondary antibodies
 - Chemiluminescent substrates
 - Signal enhancers
 - Blocking buffers
 - Wash buffers
 - Stripping buffers
 - Chemiluminescent detection
 - Fluorescent detection
 - Colorimetric detection
 - Total protein labeling for western blot normalization
 - iBright Imaging Systems
- Protein gel electrophoresis**
 - Power supplies
 - Electrophoresis tanks (mini and midi)
 - Precast mini gels
 - Bis-tris
 - Tris-glycine
 - Tris-acetate
 - Tricine
 - Precast midi gels
 - Bis-tris
 - Tris-glycine
 - Tris-acetate
 - Pour-your-own gels
 - High throughput gels (E-PAGE)
 - Gel standards and ladders
 - Gel stains
 - Total protein labeling for western blot normalization
- Western blotting**
 - Invitrogen™ iBlot™ 3 Gel Transfer Device (dry transfer)
 - Invitrogen™ Power Blotter System (semi-dry transfer)
 - Blot modules (wet transfer)
- Membranes**
 - Nitrocellulose (NC)
 - Polyvinylidene fluoride (PVDF)
- ELISAs**
 - Coated ELISA
 - Uncoated ELISA kit
 - Do-it-yourself solution
- Immunoassay Services**
- Buffers**
- Substrates**
- Enzyme conjugates**
- BCA protein concentration assays**
- Bradford protein concentration assays**
- Protein microarrays**
- Protein ligation assay**
- Invitrogen™ ProQuantum™ high-sensitivity immunoassays**
- Reporter gene assays**
- Protein and enzyme activity assays**
- Protein interaction analysis**
- _____
- _____
- _____

Recommended literature

- Cell and protein isolation technical handbook**
- Thermo Scientific™ Pierce™ products for mass spectrometry sample preparation handbook**
- Tools for protein research guide**
- Western workflow overview brochure**
- Microplate Reader Family guide**
- Protein prep overview brochure**
- iBright Imaging Systems brochure**
- Tools for protein purification poster**
- Protein Clean-Up technical handbook**
- Biomarker guide**



MORE INFORMATION

Protein biology: thermofisher.com/proteinbiology

Laboratory water analysis and purification

- Water analysis instruments**
 - Thermo Scientific™ Orion™ benchtop and handheld electrochemistry meters
 - Electrodes, buffers, and solutions
 - Potentiometric titrators
 - Colorimetry, turbidity, and spectrophotometry devices
- Water purification**
 - Thermo Scientific™ Barnstead™ Type 1 Ultrapure Water Purification Systems
 - Thermo Scientific™ Barnstead™ Type 2 Pure Water Purification Systems
 - Reverse osmosis systems
 - Water stills



MORE INFORMATION

Water purification: thermofisher.com/purewater

Laboratory equipment

- Benchtop centrifuges and rotors**
 - Microcentrifuges to general-purpose centrifuges
 - Thermo Scientific™ Fiberlite™ carbon fiber rotors
- Benchtop laboratory equipment**
 - Benchtop shakers
 - Hotplates and stirrers
 - Rockers, rotators, and mixers
 - Thermo Scientific™ Savant™ SpeedVac™ vacuum concentrators
 - Water baths
 - Dry baths
- Biological safety cabinets (BSC) and clean benches**
 - Thermo Scientific™ Herasafe™ 2030i Class II, A2 BSC
 - 1300 Series Class II, A2 BSC
 - 1500 Series Class II, B2 BSC
 - Thermo Scientific™ Heraguard™ ECO laminar flow hood
- CO₂ incubators and accessories**
 - Thermo Scientific™ Heracell™ VIOS 160i/250i CO₂ incubators
 - Thermo Scientific™ Forma™ Steri-Cult™ CO₂ incubator
 - Thermo Scientific™ Heracell™ 150i/240i CO₂ incubator
 - Thermo Scientific™ Forma™ Steri-Cycle™ CO₂ incubator
 - Thermo Scientific™ Forma™ water-jacketed CO₂ incubator
 - Thermo Scientific™ Large-Capacity Reach-in CO₂ incubator
 - Thermo Scientific Heracell Vios 160i/250i CR – CTS Series CO₂ Incubators
 - Thermo Scientific™ Heracell™ VIOS 160i CO₂ incubator with Cell Locker™ system
 - Thermo Scientific™ CultiMaxx™ Shelving System



Laboratory plasticware and supplies

- Pipettes**
 - Thermo Scientific™ F1-ClipTip™ Manual Pipettes
 - Thermo Scientific™ E1-ClipTip™ Equalizer Electronic Pipettes
 - Thermo Scientific™ Finnpipette™ F1/F2 Manual Pipettes
 - Thermo Scientific™ Finnpipette™ Novus Electronic Pipettes
 - Thermo Scientific™ S1 Pipette Filler
- Pipette tips and accessories**
 - Thermo Scientific™ ClipTip™ Pipette Tips
 - Thermo Scientific™ Finntip™ and Finntip™ Flex Pipette Tips
 - Thermo Scientific™ ART™ Universal Pipette Tips
 - Automation pipette tips
 - Reservoirs
- Dispensers**
 - Thermo Scientific™ Multidrop™ Combi-Reagent Dispenser



- Thermo Scientific™ Multidrop™ Pico Reagent Dispenser
- General labware**
 - Lab bottles: HPDE, LDPE, PP, PPCO, and more
 - Beakers
 - Cylinders
 - Erlenmeyer flasks
 - Carboys
 - Bench protector
 - Tubing
 - Environmental bottles
 - Centrifugeware
 - Snap-cap and screw-cap microtubes
 - Drop-dispensing bottles and wash bottles
 - Cleaning, safety, and organization labware
- Filtration**
 - Thermo Scientific™ Nalgene™ rapid-flow bottle-top filter units in PES, SFCA, nylon, and CN membranes
 - Nalgene analytical filters and filter funnels
 - Nalgene syringe filters
- Clinical consumables**
 - Thermo Scientific™ Samco™ sample collection and specimen containers
 - Thermo Scientific™ Samco™ transfer pipettes
 - Thermo Scientific™ Capitol Vial™ polypropylene flip-top vials and containers
 - Petri dishes, tubes, and accessories
 - Drugs-of-abuse testing products
 - Loops and needles



- Sample storage**
 - Nalgene and Nunc cryotubes
 - Thermo Scientific™ Matrix™ and Nunc™ 2D barcoded tubes
 - Nunc and Thermo Scientific Abgene™ storage plates
 - Automated and manual decapping systems
 - Cap mats and closures
 - Heat plate sealing equipment
 - Barcode readers
 - Cryoboxes and storage accessories
- Thermo Scientific™ Mr. Frosty™ Freezing Container
- Packaging**
 - Diagnostic bottles
 - IP2 bottles
 - Micro packaging vials
 - Narrow-mouth and wide-mouth bottles
 - Dropper bottles
 - Square bottles
 - PET and PETG bottles
 - Teflon™ bottles
 - Custom capabilities
- Immunoassay plates**
 - Covalent and affinity binding assays
 - Colormetric assays and ELISAs
 - Solid-phase and liquid-phase assays
 - Custom capabilities



MORE INFORMATION
Laboratory plasticware and supplies: thermofisher.com/us/en/home/life-science/lab-plasticware-supplies.html

Laboratory chemicals

- Chromatography laboratory**
 - Certified ACS solvents
 - Flush solutions
 - GC solvents
 - HPLC solvents
 - Installation kits
 - LC/MS solvents
 - Solvent blends and additives
 - UHPLC/MS solvents
 - Other
- Drug discovery laboratory**
 - Acids, bases, and buffers
 - Acrylamides
 - Agaroses
 - Albumins
 - Aminoacids
 - Antibiotics
 - Antiviral compounds
 - Buffers and detergents
 - Building blocks
 - Cell biology reagents
 - Cell culture reagents
 - Dyes and stains
 - Functional reagents for organic synthesis
 - General biochemicals
 - Maybridge™ antiviral and antibacterial libraries
 - Maybridge™ fragment collections
 - Maybridge™ HitCreator library
 - Maybridge™ HitDiscover library
 - Maybridge™ HitFinder library
 - Maybridge protein-protein interaction, g-protein coupled receptor, and kinase libraries
 - Monosaccharides and polysaccharides
 - Protease and kinase inhibitors
 - Protein biology reagents
 - Proteins and extracts
 - Surfactants
 - Other
- Organic synthesis laboratory**
 - Acids, bases, and buffers
 - Amination reagents
 - Base-metal catalysts and pre-catalysts
 - Building blocks
 - Catalyst ligands
 - Drying reagents
 - AcroSeal™ extra-dry solvents
 - Ferrocene derivatives
 - Formylation reagents
 - Grignard reagents
 - Halogenation reagents
 - Mitsunobu reagents
 - Non-reactive laboratory essentials
 - Organolithium compounds
 - Organometallic halides, amines, and other functional variants
 - Organostannane compounds
 - Organotin compounds
 - Organozinc reagents
 - Oxidation reagents
 - Precious metal catalysts and pre-catalysts
 - Reduction reagents
 - Silica gel
 - Solvents
 - Trifluoromethylation reagents
 - Other
- Applied chemistry laboratory**
 - Allotropic carbon forms and materials
 - Anhydrous materials (ultra dry)
 - Catalyst ligands
 - Etchants
 - Fuel cell catalysts
 - Inorganic compounds
 - Metal catalysts and pre-catalysts
 - Metals and alloys
 - Nanoparticles
 - Organic and inorganic acids, bases, and buffers
 - Photovoltaic materials
 - Precious metals and complexes
 - Pure elements
 - Thermo Scientific™ Reacton™ rare earth metals
 - Single crystals
 - Sputtering targets
 - Other
- Life sciences laboratory**
 - Acrylamides
 - Agaroses
 - Albumins
 - Aminoacids
 - Antibiotics
 - Bioactive molecules
 - Buffers
 - Buffers and detergents
 - Cell analysis and molecular biology reagents
 - Other



MORE INFORMATION
Laboratory chemicals: thermofisher.com/chemicals

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- Expanding an existing lab
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Learn more at thermofisher.com/jumpstart

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** For full terms, conditions, and restrictions of the program, go to thermofisher.com/aspire/tc. Eligible participants will receive bonus points when enrolling. All terms and conditions of the Aspire Member Program apply.

Look for the leaf: Enabling sustainability in your lab



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- Less hazardous
- Less waste; use fewer resources
- Energy efficient
- Sustainable packaging
- Sustainable disposal

To learn more, go to thermofisher.com/greeneralternatives

While all items should be in stock, please allow a two-week lead time for delivery of ordered items. Most in-stock items ship within 24 hours.

How to order

- Online: thermofisher.com
- Phone: (800) 263-6236
- Fax: (800) 387-1007

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New product launches: thermofisher.com/newproducts

Product selection tools: thermofisher.com/selection

Promotions: thermofisher.com/promotions

Our available webinars: thermofisher.com/webinars

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Find out more at thermofisher.com